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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,249	09/01/2005	Abbas Razavi	F-861 (31223.00078)	4021
25264 7590 09/04/2007 FINA TECHNOLOGY INC PO BOX 674412 HOUSTON, TX 77267-4412			EXAMINER LEE, RIP A	
			ART UNIT 1713	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,249	<b>Applicant(s)</b> RAZAVI, ABBAS	
	<b>Examiner</b> Rip A. Lee	<b>Art Unit</b> 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-28 and 31-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-27 and 31-41 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This office action follows a response filed on June 25, 2007. Claims 21, 24, 28, 39, and 41 were amended. Claims 21-28 and 31-41 are pending.

#### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 21-27, 32, 33, and 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Canich *et al.* (U.S. 6,194,341) in view of Winter *et al.* (U.S. 5,679,811) for the same reasons set forth in the previous office action.

Canich *et al.* discloses a process of polymerization of olefin in the presence of a mixed transition metal catalyst system comprising one late transition metal component, one early transition metal, metallocene component, and at least one activator containing  $[B(C_6F_5)]$  anion (claims 1-9). One embodiment of the invention is use of a dual catalyst for making various types of polypropylene blends in a single reactor: the metallocene is used to make high molecular weight stereoregular polypropylene and the late transition metal is used to make atactic polypropylene which resembles propylene/ethylene copolymer. Canich *et al.* provides a listing of representative metallocenes useful for the invention (column 6, lines 2-26), and although there is mentioned use  $Me_2Si(Ind)_2HfMe_2$ , the reference does not show examples in which these are used as metallocene component of the dual catalyst.

Winter *et al.* teaches that hafnium-based metallocenes such as  $Me_2Si(Ind)_2HfCl_2$  are useful for making stereoregular polypropylene with the advantage that hafnocenes produce higher molecular weight product compared with their zirconocene analogues. One skilled in the art appreciates the benefits of using high molecular weight stereoregular polypropylene for making thermoplastic polyolefin and impact copolymer. Based on the teachings of Winter *et al.*, it would have been obvious to one having ordinary skill in the art to use  $Me_2Si(Ind)_2HfMe_2$  in the catalyst of Canich *et al.* in order to make a polymer blend having high molecular weight

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polypropylene. The combination is obvious because Canich *et al.* already suggests use of hafnocenes, and Winter *et al.* shows the benefits of their use as catalyst component. And although the examples show use of MAO as the activator, one having ordinary skill in the art, in absence of any showing of criticality or unexpected results, would have found it obvious to use activator containing  $[B(C_6F_5)]$  anion because use of this type of activator is specifically proposed by the inventors.

3. Claims 21-24, 31, 34, 35, and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mecking (DE 198 23 871) for similar reasons set forth in the previous office action.

Mecking teaches a catalyst comprising a late transition metal component and an early transition metal component for polymerization of olefins. The late metal complex contains a pyridine *bisimine* ligand (III) and contains group 8 triad metals. Useful complexes include  $[(2,6-iPr_2Ph)_2(N=C(Me))](pyridine)FeBr_2$  and the corresponding dichloride complex,  $[(2,6-iPr_2Ph)_2(N=C(Me))](pyridine)FeCl_2$ . The early metal component is a metallocene or constrained geometry metallocene complex. Use of bridged hafnium compounds such as  $CH_2(BuCp)_2HfCl_2$ , and  $CH_2(Cp)_2HfCl_2$  is disclosed. An activator is required, and ionic borates, which are conventionally used in the art are described in detail.

Example 13 of Mecking shows a catalyst comprising  $[(2,6-iPr_2Ph)_2(N=C(Me))](pyridine)FeCl_2$ ,  $(BuCp)_2ZrCl_2$ , and MAO, but, it does not show a catalyst comprising all the elements cited in the instant claims. However, it would have been obvious to one having ordinary skill in the art, in absence of any showing of criticality or unexpected results, to use the corresponding hafnium derivatives,  $CH_2(BuCp)_2HfCl_2$ , or  $CH_2(Cp)_2HfCl_2$ , since the prior art shows that hafnium complexes are suitable for catalysts of this invention and that they are interchangeable with zirconium complexes. It also would have been obvious to one having ordinary skill in the art, in absence of any showing of criticality or unexpected results, to use an ionic borate because Mecking also teaches that borates activators are functionally equivalent to aluminoxanes, and one of ordinary skill in the art would have expected functionally equivalent activator to produce a working catalyst with a reasonable expectation of success. The reference is silent regarding the molecular weight distribution, however, a reasonable basis exists

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to believe that the catalyst described herein produces the claimed polymer. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

4. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

5. Applicant's arguments have been considered fully, but they are not persuasive. Canich *et al.* discloses use of borate activator (see claims), and therefore, it is maintained that one of ordinary skill in the art would have found it obvious to use this type of activator as a catalyst component. Although the claims have been amended to include a molecular weight distribution, the burden of proof rests with Applicant to establish any unobviousness differences with respect to the catalysts described in Mecking *et al.* Furthermore, it is noted that catalyst claim 21 contains intended use language (for producing a polyolefin having molecular weight distribution of from 7 to 20). Intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP § 2111.02. There is no indication that the catalyst of the prior art can not be made used to make the claimed polymers. As such, the composition of the prior art still meets the claims.

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***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

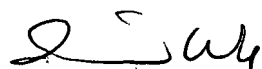
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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August 27, 2007



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